Format No: CP/TF/2017

TEST REPORT FOR SAND MASONRY MORTARS

Lab ID : **CP-2022-02-23-19** **Date: 03-05-21**

Project Name : Construction of ward office additional work, furniture etc in ward no.05, Byatarayanapura.

Agency : Sri. S K Keshavamurthy #104, Sampigehalli, Jakkur Post, Bangalore-560064

Customer's Reference : EE(Project)/Ynk Zone/WO/175/2020-21

Date of Receipt : 30-04-21

Sample Type : Fine Aggregate, M.Sand for Mortar

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2116-1980 (RA-2007) (Specification for Sand for Masonry Mortars)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 30-04-21

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS: 2116-1980 (RA-2007)
1	4.75 mm	0	0	0	100	100
2	2.36 mm	25	25	2.5	97.5	90-100
3	1.18 mm	188	213	21.3	78.7	70-100
4	600 micron	210	423	42.3	57.7	40-100
5	300 micron	295	718	71.8	28.2	5-70
6	150 micron	212	930	93.0	7.0	0-15
7	Pan	70	1000	100.0	0.0	0

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TEST REPORT FOR SAND MASONRY MORTARS

Lab ID : **CP-2022-02-23-19** **Date: 03-05-21**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	2.95	–
2	Specific Gravity	2.52	–
3	Material finer than 75 micron(%)	7.8	Crushed Fine aggregate Max 15%
4	Compacted Bulk Density (Kg/litre)	1.92	–
5	Loose Bulk Density (Kg/litre)	1.79	–

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2022-02-23-19** **Date: 18-02-21**

Project Name : Construction of ward office additional work, furniture etc in ward no.05, Byatarayanapura.

Agency : Sri. S K Keshavamurthy #104, Sampigehalli, Jakkur Post, Bangalore-560064

Customer's Reference : EE(Project)/Ynk Zone/WO/175/2020-21

Date of Receipt : 16-02-21

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 16-02-21

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	38	38	3.8	96.2	90-100	90-100	90-100	95-100
3	2.36 mm	154	192	19.2	80.8	60-95	75-100	85-100	95-100
4	1.18 mm	202	394	39.4	60.6	30-70	55-90	75-100	90-100
5	600 micron	193	587	58.7	41.3	15-34	35-59	60-79	80-100
6	300 micron	183	770	77.0	23.0	5-20	8-30	12-40	15-50
7	150 micron	191	961	96.1	3.9	0-10	0-10	0-10	0-15
8	Pan	39	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2022-02-23-19**

Date: 18-02-21

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.31	–
2	Specific Gravity	2.53	–
3	Material finer than 75 micron(%)	3.5	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : **CP-2022-02-23-19** **Date: 19-02-21**

Project Name : Construction of ward office additional work, furniture etc in ward no.05, Byatarayanapura.

Agency : Sri. S K Keshavamurthy #104, Sampigehalli, Jakkur Post, Bangalore-560064

Customer's Reference : EE(Project)/Ynk Zone/WO/175/2020-21

Date of Receipt : 16-02-21

Sample Type : Birla Super 53grade

Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
IS 4031 (Part 1,2 3,4,5, 6,11):1988
IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4
IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5
IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5
IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6

Date of test : 17-02-21

Environmental Conditions during test : Temperature: 26°C
Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.65	_
2	Finess by Air permeablity method (m^2/kg,Min)	296.3	225m^2/kg, Min
3	Density (gm/cc)	3.14	_
4	Standard Consistency (%)	28.5%	Not specified
5	Initial Setting time	145 minutes	Not less than 30 minutes
6	Final Setting time	290 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	2.0mm	Not more than 10 mm

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* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : **CP-2022-02-23-19**

Date: 17-03-21

Project Name : Construction of ward office additional work, furniture etc in ward no.05, Byatarayanapura.

Agency : Sri. S K Keshavamurthy #104, Sampigehalli, Jakkur Post, Bangalore-560064

Customer's Reference : EE(Project)/Ynk Zone/WO/175/2020-21

Date of Receipt : 16-02-21

Sample Type : Birla Super 53grade

Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 6, Determination of Compressive Strength, Clause 6

Date of test : 17-02-21

Environmental Conditions during test : Temperature: 26°C
Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	29.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.5N/mm^2	Not less than 37 N/mm^2
3	28 Days	54.5N/mm^2	Not less than 53 N/mm^2

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2022-02-23-19** **Date: 19-02-21**
Project Name	:	Construction of ward office additional work, furniture etc in ward no.05, Byatarayanapura.
Agency	:	Sri. S K Keshavamurthy #104, Sampigehalli, Jakkur Post, Bangalore-560064
Customer's Reference	:	EE(Project)/Ynk Zone/WO/175/2020-21
Date of Receipt	:	16-02-21
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	16-02-21

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	429	429	2.9	97.1	90-100
3	20 mm	7195	7624	50.8	49.2	30-70
4	10 mm	3859	11483	76.6	23.4	10-35
5	4.75 mm	2953	14436	96.2	3.8	0-5
6	Pan	564	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2022-02-23-19** **Date: 19-02-21**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	**11.3**	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	**10.6**	
3	Specific Gravity	**2.62**	_
4	Bulk Density(Loose) (Kg/l)	**1.48**	_
5	Bulk Density(Compacted) (Kg/l)	**1.53**	_
6	Water Absorption(%)	**0.19**	_

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2022-02-23-19** **Date: 18-02-21**
Project Name	:	Construction of ward office additional work, furniture etc in ward no.05, Byatarayanapura.
Agency	:	Sri. S K Keshavamurthy #104, Sampigehalli, Jakkur Post, Bangalore-560064
Customer Reference	:	EE(Project)/Ynk Zone/WO/175/2020-21
Date of Receipt	:	16-02-21
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	16-02-21

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	155	155	3.1	96.9	90-100
3	10 mm	3344	3499	70.0	30.0	25-55
4	4.75 mm	1377	4876	97.5	2.5	0-10
5	Pan	124	5000	100	0	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2022-02-23-19** **Date: 18-02-21**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	11.7	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.5	
3	Specific Gravity	2.63	–
4	Bulk Density(Loose) (Kg/l)	1.48	–
5	Bulk Density(Compacted) (Kg/l)	1.55	–
6	Water Absorption(%)	0.23	–
7	Aggregate crushing Value(%)	23.7	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	22.8	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2022-02-23-19** **Date: 18-02-21**
Project Name	:	Construction of ward office additional work, furniture etc in ward no.05, Byatarayanapura.
Agency	:	Sri. S K Keshavamurthy #104, Sampigehalli, Jakkur Post, Bangalore-560064
Customer Reference	:	EE(Project)/Ynk Zone/WO/175/2020-21
Date of Receipt	:	16-02-21
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	16-02-21

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	155	155	3.1	96.9	90-100
3	10 mm	3344	3499	70.0	30.0	25-55
4	4.75 mm	1377	4876	97.5	2.5	0-10
5	Pan	124	5000	100	0	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2022-02-23-19** **Date: 18-02-21**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	11.7	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.5	
3	Specific Gravity	2.63	_
4	Bulk Density(Loose) (Kg/l)	1.48	_
5	Bulk Density(Compacted) (Kg/l)	1.55	_
6	Water Absorption(%)	0.23	_
7	Aggregate crushing Value(%)	23.7	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	22.8	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

* The results obtained are satisfactory as per standard requirements.

Asst. Executive Engineer
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